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# Recent Trends in Public Knowledge, Attitudes, and Reported Behavior With Respect to High Blood Pressure

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HIGH BLOOD PRESSURE affects an estimated 60 million Americans. Since 1972, Federal, State, and local government programs, along with organizations in the private sector, have cooperated in an effort to control this disease through the National High Blood Pressure Education Program (NHBPEP). Coordinated by the National Heart, Lung, and Blood Institute (NHLBI), this program focuses on increasing public and professional awareness of this serious health problem. The goal of program participants is to reduce deaths and disability related to high blood pressure through improved education, detection, and treatment.

The NHLBI has sponsored two national surveys of public knowledge, attitudes, and reported behavior with respect to high blood pressure, namely, a bench-

mark survey conducted in 1973 (shortly after the NHBPEP began) and a followup 6 years later in 1979. The 1973 survey (1) was conducted by Louis Harris and Associates, which also conducted the 1979 follow-up study in the field (2), which was analyzed by Urban Behavioral Research Associates (UBRA), St. Louis, Mo. Similar surveys carried out by other organizations include a hypertension supplement to the 1974 National Health Interview Survey of the National Center for Health Statistics (3); a 1978 Health Maintenance Survey (4) commissioned by the Pacific Mutual Life Insurance Company and conducted by Louis Harris and Associates; and a 1978 Gallup survey (5). The samples selected and the types of data collected in these surveys of the public with respect to high blood pressure are shown in table 1.

The results of the cited surveys provide a basis both for examining the general effectiveness of current efforts to educate the public about high blood pressure and for identifying needs that must be met in future efforts. In addition, they provide a basis for planning educational strategies and materials for the public and patients that will be helpful at national, community, and local levels. Collectively, the surveys provide useful information on key areas where progress has been

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made, and at the same time they offer further challenges in high blood pressure control. The survey data generally indicate that Americans have become increasingly aware of the consequences of high blood pressure and that they understand it can be treated but not cured. Despite the gain in knowledge, however, there has been only a slight increase in the percentage of hypertensives who report that they are maintaining their treatment regimen.

The analysis of the trends in people's knowledge of high blood pressure and its treatment and control that we present in this paper is based mainly on the 1973 baseline Harris survey and the second benchmark survey in 1979. However, we have also used data from the 1974 National Health Interview Survey, the 1978 Health Maintenance Survey, and the 1978 Gallup survey when appropriate. Our focus here is on the survey results themselves, but we expect in the future to delve into explanations for the results and to seek reasons for the trends observed.

### **People's Feelings About Their Health**

Hypertensives tend to feel less positive about their health than the general population (58 percent of hypertensives versus 80 percent of the general population

expressed positive feelings about their health in 1973, and 62 percent versus 81 percent in 1979). This less positive outlook is not because the hypertensive respondents tended to be older than the general public: hypertensives, regardless of age, were less likely than the general population to see their own health positively (table 2).

Although no changes overall were observed in the attitudes of the total population about their personal health status from 1973 to 1979, there was a slight increase in positive response among hypertensives: 58 percent of the current hypertensives in 1973 had positive feelings about their health compared with 62 percent in 1979. (In this paper, unless otherwise stated, the term "hypertensives" refers to "current hypertensives." In the 1973 and 1979 surveys mentioned, current hypertensives were defined as persons identified as hypertensive on more than one occasion, persons currently taking medication for high blood pressure, or persons who believed that their blood pressure was still high. In the 1974 National Health Interview, "current hypertensives" were persons who reported that their hypertension was still present or under control at the time of the interview or that they were taking medication prescribed for it. The Gallup survey and

Table 1. Surveys of the U.S. public's knowledge, attitudes, and reported behavior with respect to high blood pressure, 1973-79

<i>Year and name of survey</i>	<i>Population surveyed</i>	<i>Kinds of data collected</i>
1973 survey of the public and high blood pressure (Harris survey)	Representative sample of 3,181 persons 17 years and older.	General attitudes toward health and knowledge of information sources; knowledge of high blood pressure, including the seriousness of high blood pressure, its likely causes, its treatment, and other illnesses and symptoms caused by high blood pressure; demographics of aware hypertensives, including their experience with hypertension detection and treatment.
1974 National Health Interview Survey	Representative sample of 26,000 persons 17 years and older.	Demographics by reported hypertension status; intervals and frequency of blood pressure tests; use of antihypertensive medication, dietary habits, and other health-related items applicable to the hypertensive population.
1978 Health Maintenance Survey	Representative sample of 1,517 persons 18 years and older.	When blood pressure was last checked; knowledge of high blood pressure, including normal blood pressure ranges, related symptoms and other illnesses, and possible causes; sources of information about health care.
1978 Gallup survey	Representative sample of 4,549 persons 18 years and older.	Awareness of the consequences and conditions associated with high blood pressure; knowledge about the control of high blood pressure; reported treatment and compliance behavior of aware hypertensives.
1979 survey of the public and high blood pressure (Harris-UBRA survey) <sup>1</sup>	Representative sample of 5,043 persons 17 years and older.	Followup to 1973 Harris survey; same kinds of data collected.

<sup>1</sup> UBRA = Urban Behavioral Research Associates.

Table 2. Percentages of total and hypertensive respondents reporting that their own health was "excellent" or "pretty good," by demographic characteristics, 1973, 1978, and 1979

<i>Demographic characteristics</i>	<i>1973 Harris survey</i>		<i>1979 Harris-UBRA survey</i>	
	<i>Total</i>	<i>Hypertensives</i>	<i>Total</i>	<i>Hypertensives</i>
<b>Total</b>	<b>80</b>	<b>58</b>	<b>81</b>	<b>62</b>
<i>Age</i>				
Under 35	89	74	89	84
35-49	84	66	84	68
50-64	72	53	72	53
65 and over	63	50	66	56
<i>Race</i>				
White	81	61	82	65
Black	66	43	72	52
<i>Sex</i>				
Male	80	60	81	61
Female	79	57	81	64
<i>Education</i>				
Not high school graduate	68	47	67	51
High school graduate	86	69	85	69
College graduate or more	92	77	94	84

the Health Maintenance Survey did not include a category of "current hypertensives.")

Certain population segments showed larger gains in positive responses about their health than the population as a whole. For example, the percentage of blacks in the general population reporting positive feelings increased from 66 to 72 percent between 1973 and 1979, and the percentage of black hypertensives rating their health positively increased from 43 to 52 percent. Also, positive responses from hypertensives under 35 years of age increased from 74 to 84 percent.

The survey results indicate that the public has continued to receive regular physical checkups. In both 1973 and 1979, nearly 70 percent of the general public and approximately 80 percent of the hypertensives reported a visit to a physician for a physical checkup within the previous 12 months.

### Sources of Information About Health

Based on data from the Harris surveys, the percentage of the public who believed they could learn what they needed to know about health care increased only slightly from 1973 to 1979 (58 percent in 1973 versus 61 percent in 1979). Results of the Health Maintenance Survey indicate that in 1979, 63 percent of the respondents were able to learn about preventive health. There

Table 3. Percentages of total and hypertensive respondents reporting that selected sources provided "a great deal" or "some" information on health, 1973, 1978, and 1979

Sources	1973 Harris survey		1978 Health Maintenance Survey—Total <sup>1</sup>	1979 Harris-UBRA survey	
	Total	Hypertensives		Total	Hypertensives
Doctor or clinic .....	80	85	80	83	87
Public service messages on TV .....	67	64	<sup>2</sup> 72	63	60
Health articles in magazines .....	62	57	<sup>3</sup> 67	58	54
Medical columns in newspapers .....	58	57	<sup>4</sup> 62	53	54
TV medical news .....	56	55	<sup>5</sup> 65	57	52
Publications from organizations like the American Heart Association .....	42	39	62	45	42
Friends or relatives .....	40	35	44	46	40
Public service messages on radio .....	40	37	<sup>2</sup> 72	31	26
Nurses .....	39	37	<sup>(6)</sup>	47	49
TV advertising .....	38	38	<sup>7</sup> 40	35	34
Government publications .....	35	31	43	34	32
Courses in school .....	32	21	41	34	23
Pharmacists .....	31	33	39	39	42

<sup>1</sup> Data not available on hypertensives.

<sup>2</sup> Includes public service messages on TV and radio.

<sup>3</sup> Includes health articles in newspapers.

<sup>4</sup> Includes medical columns in magazines.

<sup>5</sup> Includes news stories on radio.

<sup>6</sup> Percentage not available.

<sup>7</sup> Not limited to TV advertising.

was no real difference between the responses of hypertensives and those of the general public.

As shown in table 3, physicians and clinics continued to be the leading sources of health information for both hypertensives and the total population and were also considered to be the most reliable sources. In 1979, 83 percent of the respondents reported that they had obtained a great deal or some health information from their doctor or clinic. These sources were followed in frequency of mention by public service messages on television (63 percent of the public), magazine articles (58 percent), television medical news (57 percent), and newspaper columns (53 percent). The ranking of these top five information sources in frequency of mention has not changed since 1973 and was the same for hypertensives as for the general public. Responses from the 1978 Health Maintenance Survey also correspond with these results.

### Knowledge of High Blood Pressure

In 1979, 69 percent of the total respondents reported that they had learned a great deal or something about high blood pressure in the 5 years before the survey interview. The surveys also revealed what the public has learned about the seriousness of the disease, its correct definition, its causes, diseases related to it, its symptoms, and its treatment.

**Seriousness of the disease.** The proportion of respondents reporting high blood pressure to be a very serious disease has increased. In 1979, 72 percent of the total population and 82 percent of current hypertensives

expressed the belief that high blood pressure was a "very serious" disease for someone in their age bracket; both ranked it as the fourth most serious disease (after cancer, stroke, and a heart condition). More blacks (82 percent), elderly people (82 percent), females (76 percent), and non-high-school graduates (80 percent) considered high blood pressure to be serious than did

Table 4. Percentages of total and hypertensive respondents reporting that high blood pressure is a very serious disease, by demographic characteristics, 1973 and 1979

Demographic characteristics	1973 Harris survey		1979 Harris-UBRA survey	
	Total	Hypertensives	Total	Hypertensives
Total .....	63	72	72	82
<i>Age</i>				
Under 35 .....	48	51	67	73
35-49 .....	64	69	72	81
50-64 .....	75	79	78	82
65 and over .....	75	77	82	87
<i>Race</i>				
White .....	61	70	72	81
Black .....	77	84	82	89
<i>Sex</i>				
Male .....	59	66	68	78
Female .....	66	76	76	85
<i>Education</i>				
Not high school graduate	71	78	80	88
High school graduate ..	59	68	71	79
College graduate or more .....	54	55	63	69

Table 5. Percentages of respondents giving selected meanings for the word "hypertension," by educational and hypertension status, 1973 and 1979

Definitions	1973 Harris survey					1979 Harris-UBRA survey				
	Total	Not high school graduate	High school graduate	College graduate or more	Hypertensives	Total	Not high school graduate	High school graduate	College graduate or more	Hypertensives
Bad nerves, nervous condition . . . .	26	23	28	27	26	23	24	23	20	22
High blood pressure . . . . .	24	17	26	38	33	32	23	34	45	41
Too much tension, pressure . . . . .	23	14	27	32	19	16	10	18	24	14
Overanxiety . . . . .	7	5	8	9	5	6	4	6	7	6
Overactive . . . . .	5	3	6	4	3	10	9	11	8	7
Overexcitement . . . . .	4	4	3	3	4	4	5	4	3	5
Don't know . . . . .	26	44	17	6	24	23	37	18	9	20

their counterparts—whites (72 percent), young people (67 percent), males (68 percent), and college graduates (63 percent). In the 1973 survey, 63 percent of the total population and 72 percent of the hypertensives considered high blood pressure to be very serious (table 4).

**Definitions of the disease.** Only 24 percent of the general public in 1973 and 32 percent in 1979 indicated that hypertension is the same as high blood pressure—the appropriate response (table 5). Among respondents who had ever been told they had high blood pressure, 33 percent in 1973 and 41 percent in 1979 gave this response. This knowledge was closely associated with the respondent's educational level. In 1979, for example, nearly twice the percentage of college graduates as of non-high-school graduates correctly matched hypertension with high blood pressure (45 percent versus 23 percent).

As shown in table 6, when asked about the meaning of high blood pressure, a very small proportion of the population (2 percent in both 1973 and 1979) answered, "Hypertension." Many of the other volunteered responses, however, also reflected various degrees of understanding of the disease, for example, blood pressure above normal (13 percent in 1973 and 17 percent in 1979); pressure on veins and arteries too high (7 percent in 1973 and 10 percent in 1979); danger signal (7 percent in 1973 and 6 percent in 1979); and possible cause of stroke (4 percent in 1973 and 3 percent in 1979). In general, the public's ability to define high blood pressure has improved only slightly, and those who had ever been told that they had the disease seemed to have no greater understanding of the meaning of high blood pressure than the general public.

A large proportion of respondents continued to have the erroneous perception that hypertension means nervous tension. The public associated hypertension

with bad nerves (26 percent in 1973 and 23 percent in 1979), too much tension or pressure (23 percent in 1973 and 16 percent in 1979), overanxiety (7 percent in 1973 and 6 percent in 1979), overactivity (5 percent in 1973 and 10 percent in 1979), and overexcitement (4 percent in both years).

Respondents in the Harris surveys were also asked if they knew what was considered normal blood pressure for their ages. Twenty-six percent of the total respondents in 1973, 34 percent in 1978, and 30 percent in 1979 expressed the belief that they could define a normal blood pressure. Among current hypertensives, the percentages were 40 percent in 1973 and 41 percent in 1979. Almost twice the proportion of whites as blacks (in 1979, 33 percent versus 18 percent) claimed to know what normal blood pressure is; col-

Table 6. Percentages of total and hypertensive respondents giving selected meanings for "high blood pressure," 1973 and 1979

Definition	1973 Harris survey		1979 Harris-UBRA survey	
	Total	Hypertensives	Total	Hypertensives
Heart working harder, pressure on heart . . . . .	13	14	13	14
Blood pressure above normal	13	10	17	14
Heart pumping too fast . . . . .	11	11	8	8
Blood flowing too fast . . . . .	8	7	8	8
Pressure on veins, arteries too high . . . . .	7	5	10	9
Danger signal . . . . .	7	8	6	8
Related to stress, anxiety . . . . .	7	8	4	4
Arteries, veins constricted . . . . .	5	6	4	4
Too much blood, blood too thick . . . . .	5	5	3	3
May cause a stroke . . . . .	4	6	3	5
Hypertension . . . . .	2	5	2	3
Don't know . . . . .	23	22	24	23

Table 7. Percentages of respondents giving specified likely causes of high blood pressure, by race and hypertension status, 1973 and 1979

Causes	1973 Harris survey				1979 Harris-UBRA survey			
	Total	Whites	Blacks	Hypertensives	Total	Whites	Blacks	Hypertensives
Emotional pressure, worry,								
anxiety .....	48	50	34	53	49	52	38	49
Overweight .....	26	26	18	30	26	27	17	30
Improper diet .....	19	19	24	18	30	30	36	30
Fatty foods, cholesterol .....	8	7	14	10	6	6	9	6
Overexertion .....	7	7	5	6	6	6	5	6
Alcohol .....	7	7	10	8	8	8	12	9
Heredity .....	7	7	3	8	12	13	7	14
Too much salt .....	5	4	14	9	12	11	24	16
Smoking .....	4	4	2	4	10	11	4	10
Pork .....	3	1	15	4	2	1	17	3
Lack of exercise .....	3	4	1	3	7	7	3	6
Don't know .....	19	18	17	13	16	15	14	11

lege graduates also were much more likely to report knowing what it is than were non-high-school graduates (in 1979, 42 percent versus 21 percent). The results, when respondents were asked in turn to define a normal blood pressure reading, reflected a substantial gain over the 6-year period in public awareness of what normal blood pressure is. For example, 38 percent of the respondents in 1973 said normal blood pressure is less than 140/90 mm Hg; this proportion increased to 63 percent in 1979.

**Causes.** Overall, the top three causes of high blood pressure identified in 1973 remained the same in 1979: emotional stress, overweight, and improper diet. A larger percentage of respondents in 1979 than in 1973, however, saw as the causes improper diet (30 percent versus 19 percent), too much salt (12 percent versus

5 percent), heredity (12 percent versus 7 percent), and smoking (10 percent versus 4 percent). These percentages are for volunteered responses. When respondents were subsequently asked to pick the causes from a list, the percentages of respondents who regarded these items as causes were much higher, but the same trends continued. Blacks tended to place more emphasis on dietary causes of high blood pressure (improper diet, fatty foods, too much salt, and pork) than did whites (table 7).

**Related diseases.** Knowledge that high blood pressure causes stroke, heart trouble, and kidney trouble has increased (table 8). In 1979, more than half (51 percent) of the total population and 64 percent of the persons who were ever told that they had high blood pressure reported it to be a major likely cause of stroke

Table 8. Percentages of total and hypertensive respondents reporting that high blood pressure is a likely cause of heart trouble, stroke, and kidney trouble, 1973, 1978, and 1979

Condition	1973 Harris survey		1978 Gallup survey		1979 Harris-UBRA survey	
	Total	Hypertensives <sup>1</sup>	Total	Hypertensives	Total	Hypertensives <sup>1</sup>
Based on volunteered responses						
Heart trouble .....	13	18	NA	NA	24	29
Stroke .....	43	54	NA	NA	51	64
Kidney trouble .....	1	3	NA	NA	6	11
Based on selections from a list						
Heart attack .....	81	82	74	77	89	91
Stroke .....	87	91	85	88	91	95
Kidney trouble .....	...	...	19	30	35	44

<sup>1</sup> To keep percentages comparable, term refers to people who have ever been told they have high blood pressure, rather than to "current hypertensives."

NOTE: NA=not applicable. Leaders (...) indicate data not available.

(up from 43 percent and 54 percent in 1973). Twenty-four percent of the total population reported in 1979 that high blood pressure is a likely cause of heart trouble, as compared with 13 percent in 1973. Among the persons who were ever told that they had high blood pressure, 29 percent in 1979 (up from 18 percent in 1973) volunteered high blood pressure as a cause. Although only 6 percent of the total population and 11 percent of the hypertensives reported high blood pressure as a cause of kidney trouble, this result represents an increase in knowledge since 1973, when the proportions were 1 percent of the total population and 3 percent of hypertensives.

Respondents were much more likely to associate high blood pressure with stroke, heart attack, and kidney trouble when asked to pick the illness caused by high blood pressure from a list. For example, 87 percent of the total population in 1973, 85 percent in the 1978 Gallup survey, and 91 percent in 1979 picked stroke as an illness caused by high blood pressure; 81 percent in 1973, 74 percent in 1978, and 89 percent in 1979 picked heart attacks. In addition, 19 percent of all respondents picked kidney trouble (which was included in the list in 1978 and 1979) as a cause in 1978 and 35 percent in 1979.

Paradoxically, although a large proportion of the respondents recognized that high blood pressure causes certain cardiovascular diseases, only 15 percent of the total population in 1973 and 18 percent in 1979 volunteered that "watching blood pressure" was the best way to prevent a stroke, and an even smaller proportion (1 percent in 1973 and 2 percent in 1979) reported that such watching could prevent heart trouble.

**Symptoms.** Most hypertensives (approximately 65 percent in both 1973 and 1979) indicated that they could tell when their blood pressure was high, giving dizziness and headaches as the most common symptoms. A large percentage of respondents, however, realized that it is somewhat likely or very likely that a person could have high blood pressure without obvious symptoms (72 percent of the public and 74 percent of the hypertensives in 1973 versus 84 percent of the public and 86 percent of the hypertensives in 1979).

**Treatment.** The public has become increasingly aware that there is treatment for high blood pressure (87 percent in 1973 and 93 percent in 1979). In addition, 86 percent of the public in 1979 (83 percent in 1973) indicated they knew that treatment must continue and that there is no "cure." Similarly, in the 1978 Gallup survey, 83 percent of the respondents reported that high blood pressure can be "controlled."

Most people (73 percent of the respondents in 1973 and 79 percent in 1979) volunteered that medicine is an effective treatment for lowering blood pressure. Other treatments that were indicated included proper diet, exercise, and a low-salt diet.

### **Experience of Aware Hypertensives**

**Reported prevalence of high blood pressure.** Approximately one of every four adults in the United States has been told that he or she has high blood pressure. This statement is based on the proportions of respondents in the various surveys who had been so informed (24 percent in the 1973 Harris survey, 22 percent in the 1974 National Health Interview Survey, 23 percent in the 1978 Gallup survey, and 25 percent in the 1979 Harris-UBRA survey). The proportion reporting that they had high blood pressure in a subgroup of the ever-been-told group, namely, "current hypertensives" (defined on page 515), was 16 percent in 1973, 17 percent in 1974, and 19 percent in 1979 (table 9).

Based on data from these surveys, more blacks than whites reported being current hypertensives (29 percent versus 18 percent in 1979). The proportion of people who reported having high blood pressure increased with age: in 1979, 7 percent of those 17-34 years of age had high blood pressure, compared with 37 percent of those 65 years and over. The reported prevalence of the disease was also greater for lower income people: in 1979, 34 percent of those with an annual family income of less than \$5,000 were hypertensive, compared with only 15 percent of those with a family income of \$15,000 or more. In addition, slightly more females than males reported being hypertensive (21 percent versus 17 percent in 1979).

The relationship between high blood pressure and race, age, and income reported in these surveys of public knowledge is consistent with results of the 1971-74 Health and Nutrition Examination Survey (HANES), which consisted of an interview and an examination. Data from the HANES, however, indicate that, overall, slightly more men than women have high blood pressure.

**Monitoring of blood pressure.** Seventy-eight percent of hypertensives in 1973 and 83 percent in 1979 reported having had their blood pressure checked two times or more in the year before the survey interview. Although 78 percent is a sizable majority of the hypertensives, 22 percent in 1973 and 17 percent in 1979 still reported that they did not have their blood pressure checked regularly.

Physicians and nurses performed 99 percent of the blood pressure measurements in 1973 and 95 percent

Table 9. Reported prevalence of high blood pressure per 100 persons, by demographic characteristics, 1973, 1974, 1978, and 1979

Demographic characteristics	1973 Harris survey		1974 National Health Interview Survey			1979 Harris-UBRA survey	
	Ever been told <sup>1</sup>	Current hypertensives <sup>2</sup>	Ever been told <sup>1</sup>	Current hypertensives <sup>2</sup>	1978 Gallup survey—ever been told <sup>1,3</sup>	Ever been told <sup>1</sup>	Current hypertensives <sup>2</sup>
Total	24	16	22	17	23	25	19
<i>Age<sup>4</sup></i>							
Under 35	15	7	8	4	12	13	7
35-49	18	11	15	10	19	24	18
50-64	32	23	30	24	34	37	31
65 and over	38	31	43	36	43	43	37
<i>Race</i>							
White	22	15	21	16	22	24	18
Black	34	25	29	24	32	35	29
Other	25	14	(5)	(5)	(5)	20	13
<i>Sex</i>							
Male	20	14	19	14	21	23	17
Female	27	18	(5)	(5)	25	27	21
<i>Education</i>							
Not high school graduate	30	22	29	23	31	34	27
High school graduate	20	12	18	13	19	22	16
College graduate or more	19	11	17	11	21	19	13
<i>Income</i>							
Under \$5,000	35	27	32	27	37	42	34
\$5,000-\$9,999	23	15	23	18	25	29	23
\$10,000-\$14,999	20	12	18	12	23	24	17
\$15,000 and over	18	10	18	13	18	20	15

<sup>1</sup> Refers to persons who have ever been told they have high blood pressure.

<sup>2</sup> As defined on page 515.

<sup>3</sup> Survey provided data only on "ever been told" category.

<sup>4</sup> Age breakdowns in the 1974 National Health Interview Survey were 17-24, 25-44, 45-64, and 65 and over.

<sup>5</sup> Data not available.

in 1979. Nurses were reported to have performed 38 percent of blood pressure checks in 1979, up from 26 percent in 1973. The percentage of respondents reporting that physicians took their blood pressure decreased from 73 percent in 1973 to 57 percent in 1979.

**Treatment.** Most hypertensives have had some form of treatment prescribed for them—87 percent in 1973 and 84 percent in 1979. The slight decrease between 1973 and 1979 may have been due to use of nondrug alternatives, which some respondents may not have thought of as "treatment." A large proportion of hypertensive respondents said that they were still following their prescribed treatment (78 percent in 1973 and 81 percent in 1979); in both years, the treatment for approximately 90 percent of the current hypertensives consisted of some type of medication. Nondrug treatments were prescribed more often in 1979 than in 1973. Over the 6-year period, the percentage of hypertensives with a prescribed treatment who specifically reported a salt-restricted diet increased from 20 to 39, the percentage specifically mentioning a weight-loss diet increased from 13 to 34, and the percentage indicating treatment that involved stress reduction increased

from 6 to 19. In 1973, 17 percent of the respondents mentioned "proper eating habits," a general category not reported in 1979.

Treatment reportedly prescribed	Percent in 1973 Harris survey	Percent in 1979 Harris-UBRA survey
Medicine	89	94
Salt-free diet	20	39
Lose weight	13	34
Proper eating habits	17	..
Reduce tension or calm down	6	19
Exercise	3	11
Reduce or stop smoking	3	9

**Medication.** Among current hypertensives who had ever taken medication for high blood pressure (82 percent in 1973 and 81 percent in 1979), 77 percent in 1973 and 81 percent in 1979 reported that they were still taking it. Younger hypertensives were more likely to discontinue their medication than were older ones. Hypertensives who were no longer continuing their prescribed treatment were asked why they had stopped. In 1979, 34 percent indicated they had stopped because they believed their blood pressure was normal, 16 percent said they believed that they did not need the treatment any more, and 40 percent reported that their

doctor had told them to stop. Only 8 percent gave side effects as a reason for stopping, and only 3 percent said the treatment was too expensive. Although a large proportion of those who stopped attributed their actions to a physician's advice, this proportion did decrease from 61 percent in 1973 to 40 percent in 1979.

**Lifestyle changes.** Nondrug treatment to reduce blood pressure often includes reduced salt use and weight-reduction diets. In addition, hypertensives may be encouraged to stop smoking, because cigarette smoking is a major co-risk factor for cardiovascular disease. More hypertensives (65 percent in 1979 versus 57 percent in 1973 and 49 percent in 1974) reported in 1979 that they had been told to use less salt, but the reported use of salt by hypertensives actually increased from 1973 to 1979. A higher percentage of blacks than whites were told to use less salt, but the reported salt usage of blacks was not substantially different from that of whites. The percentage of hypertensives who considered themselves overweight remained about the same (58 percent in 1973, 55 percent in 1974, and 55 percent in 1979). In 1979, 44 percent of the hypertensives had been told to go on a weight-losing diet, and 50 percent of those who were so advised were on a diet at the time of the interview. There was no real change in the percentage of hypertensives who smoked cigarettes at the time of the survey interview (29 percent in 1973, 31 percent in 1974, and 29 percent in 1979). A higher proportion of hypertensives than the general population, however, had given up smoking (47 percent versus 35 percent of the general population in 1979).

**Effects of high blood pressure.** Hypertensive respondents in the 1973, 1974, and 1979 surveys reported a higher percentage of heart attacks and strokes than did the general public. Nevertheless, in 1979, three-fourths of the hypertensives reported that they had not made any major changes in lifestyle because of their high blood pressure. Only 8 percent of the hypertensives were unable to get life insurance (down from 11 percent in 1973), and only 12 percent had missed work (or their usual activity) because of their high blood pressure (down from 21 percent in 1973).

## Conclusions

Based on various surveys of the public with respect to high blood pressure conducted between 1973 and 1979, a number of conclusions about public knowledge, attitudes, and behavior with respect to this disorder have been reached.

Physicians and clinics are the leading source of information about health, in addition to being viewed

as the most reliable. Physicians and nurses perform most blood pressure measurements. Although the majority of measurements are still taken by physicians, nurses are performing an increasing percentage.

People have become increasingly aware that high blood pressure is a serious disease which increases the risk of stroke, heart trouble, and kidney trouble. Only a small percentage of respondents, however, report that "watching blood pressure" is a good way to prevent strokes and heart trouble. There has been a gain in understanding of what high blood pressure is, but the public continues to have the erroneous perception that hypertension means nervous tension. Knowledge that there is a treatment for high blood pressure has increased. In addition, knowledge that treatment must continue and that there is no cure for the disease remains high. There is, furthermore, a growing awareness of the role of diet as a treatment for, and contributor to, high blood pressure.

Hypertensives are generally more likely than non-hypertensives to understand the meaning, treatment, and consequences of high blood pressure, but there generally is not a major difference between the two groups. Although hypertensives feel less positive about their health than the general population, certain hypertensive subgroups (such as young people and blacks) have shown large gains in positive feelings. A large proportion of hypertensives indicate that they can tell when their blood pressure is high (and give dizziness and headaches as common symptoms), but a large percentage also report that it is somewhat likely or very likely that a person could have high blood pressure without obvious symptoms. Finally, although there has been an increase in knowledge, there has not been a substantial decrease in the percentage of hypertensives who report dropping out of treatment.

## References

1. National Heart, Lung, and Blood Institute: The public and high blood pressure. DHEW Publication No. (NIH) 77-356. U.S. Government Printing Office, Washington, D.C., June 1973.
2. National Heart, Lung, and Blood Institute: The public and high blood pressure: a second look. Six year follow-up survey of public knowledge and reported behavior. NIH Publication No. 81-2118. Bethesda, Md., September 1981.
3. National Center for Health Statistics: Characteristics of persons with hypertension, U.S., 1974. Vital and Health Statistics, series 10, No. 121. DHEW Publication No. (PHS) 79-1549. Hyattsville, Md., December 1978.
4. Pacific Mutual Life Insurance Company: Health maintenance. Newport Beach, Calif., November 1978.
5. National High Blood Pressure Education Program: High blood pressure control: 1978 data on public perceptions and practices. National Heart, Lung, and Blood Institute, Bethesda, Md., February 1979.